No. 9500039

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Ohio Agricultural Research and Development Center,
The Ohio State University

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS REQUIRED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'Ohio FG2'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington, D.C. *this* 28th *day of* June *in the year of our Lord one thousand nine hundred and* ninety-six.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and edition date on all reproductions.* OMB APPROVED NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(INSTRUCTIONS ON REVERSE)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate)
Ohio Agricultural Research and Development Center-The Ohio State University

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO.
HS90-3513

3. VARIETY NAME
Ohio FG2

4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP)
202 Kottman Hall
2021 Coffey Road
Columbus, OH 43210

5. PHONE (include area code)
(614) 292-2001

FOR OFFICIAL USE ONLY

PVPO NUMBER
9500039

FILING
Date: 14 Nov. 1994
Time: 10:30 A.M. ☐ P.M.

FEES RECEIVED
Filing and Examination Fee: $ 2325.00
Date: Nov. 14, 1994
Certificate Fee: $ 300.00
Date: 5-2-96

6. GENUS AND SPECIES NAME
Glycine Max

7. FAMILY NAME *(Botanical)*
Fabaceae (Leguminosae)

8. CROP KIND NAME *(Common Name)*
Soybean

9. DATE OF DETERMINATION
February 11, 1994

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.)
State Agricultural Experiment Station

11. IF INCORPORATED, GIVE STATE OF INCORPORATION

12. DATE OF INCORPORATION

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
Dr. Steven St. Martin
Dept. of Horticulture and Crop Science/The Ohio State University
202 Kottman Hall
2021 Coffey Road
Columbus, OH 43210
PHONE (include area code): (614) 292-2001

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow* INSTRUCTIONS *on reverse)*
- a. ☒ Exhibit A, Origin and Breeding History of the Variety
- b. ☒ Exhibit B, Novelty Statement
- c. ☒ Exhibit C, Objective Description of Variety
- d. ☐ Exhibit D, Additional Description of Variety
- e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership
- f. ☒ Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office _____
- g. ☒ Filing and Examination Fee ($2,325) made payable to "Treasurer of the United States"

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See section 83(a) of the Plant Variety Protection Act)* ☒ YES *(If "YES," answer items 16 and 17 below)* ☐ NO *(If "NO," skip to item 18 below)*

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ YES ☒ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ YES (If "YES," through ☐ Plant Variety Protection Act ☐ Patent Act. Give date: _____).
☒ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
☒ YES (If "YES," GIVE NAMES OF COUNTRIES AND DATES) August 1, 1994, U.S.
☒ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT [Owner(s)]	CAPACITY OR TITLE	DATE
Steven St. Martin	Associate Professor (breeder)	10/31/94
SIGNATURE OF APPLICANT [Owner(s)]	CAPACITY OR TITLE	DATE
Paul B. Cregan	Dir. Tech Trans	11/9/94

SD-470 (06-93) *Editions of Forms FS-470 (3/86) and CSSD-470 (5/89) are to be destroyed.*

CONTINUED ON REVERSE

1

'Ohio FG2' Exhibit A - Origin and Breeding History

Ohio FG2 was derived from the cross 'LS301' x HS84-6247, which was made at Columbus, Ohio, in the summer of 1987. The breeding line HS84-6247 was derived from 'Zane'[3] x HW79149. The germplasm line HW79149 is a source of phytophthora resistance derived by backcrossing with A72-507 ('Amsoy' x 'Wayne') as recurrent parent. Phytophthora resistance in HW79149 derives ultimately from PI 82263-2 and is believed to be due to the *Rps3* gene.

The F_1 and F_2 plants from which Ohio FG2 derives were grown at Mayaguez, Puerto Rico, during the winter of 1987-88, and the F_2 plant was harvested individually. In the summer of 1988, the F_2-derived line HS88-8318 was evaluated in a single-row, 1.5-m-long plot at Columbus. The F_2-derived line was harvested in bulk and tested further in replicated tests at three Ohio locations in 1989 and 1990.

Individual F_4 plants from HS88-8318 were harvested in 1989. One of the resulting F_4-derived lines, designated HS90-3513, was planted for seed increase in 1990 at Columbus.

Line HS90-3513 was tested in the Ohio Large-Seeded Test at three locations each year from 1991 through 1993. It was tested regionally in Uniform Preliminary Test IIIA in 1993. It was also entered in the Ohio Advanced Line Test in 1993. In addition to evaluation of agronomic characteristics and disease resistance, the quality of soymilk and tofu produced from the seed were also measured.

On February 11, 1994, the release of HS90-3513 under the name 'Ohio FG2' was approved by the Crop Variety Release and Distribution Committee of the Ohio Agricultural Research and Development Center (OARDC). This action was subsequently approved by the Director of OARDC.

Purification and multiplication of Ohio FG2 were initiated by selection of typical individual plants in 1991. Progeny rows from these plants were produced at South Charleston, Ohio, in 1992; rows were selected for uniformity and trueness to type. Seed from each row was tested to make certain that it was uniform for response to phytophthora rot. Seed from the uniform rows was increased at Croton, Ohio, in 1993. This increase was inspected and rogued at flowering and maturity to provide breeder seed.

Ohio FG2 possesses a uniform plant type. Variants have been observed, however, having imperfect black or buff hila. Variants of this type may constitute at most 0.1% of the variety.

Stability of Ohio FG2 is indicated by consistent maturity, height, yield, seed size, pigment characteristics, disease reaction, and chemical composition relative to other cultivars in regional and Ohio tests.

'Ohio FG2' Exhibit B - Statement of Novelty

The primary distinctive features of Ohio FG2 are its large seed size and its source of resistance to phytophthora rot. This source of resistance (PI 82263-2), phenotypically similar (and probably identical to) *Rps3*, is found in very few cultivars. The originating breeder is not aware of any other large-seeded, gray-hilum cultivars that carry this form of resistance.

Ohio FG2 is similar to Vinton 81 in seed size and in color of flower and pubescence. Ohio FG2 differs from Vinton 81, however, in source and race-specificity of phytophthora resistance, in mature pod color (Vinton 81 has tan pods, Ohio FG2 brown), and in hilum color (Vinton 81 has a yellow hilum, Ohio FG2 gray). Data given in exhibit C, part 23, indicate that, in Ohio, Vinton 81 matures approximately 7 days earlier than Ohio FG2.

The gray hilum of Ohio FG2 distinguishes it from its sister line 'Ohio FG1', which has a yellow hilum.

FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
~~LIVESTOCK, MEAT, GRAIN~~ & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (Glycine max L.)

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
Ohio Agricultural Research and Development Center, The Ohio State University	HS90-3513	Ohio FG2

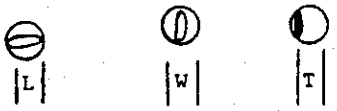
ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*
202 Kottman Hall
2021 Coffey Road
Columbus, OH 43210

FOR OFFICIAL USE ONLY
PVPO NUMBER
9500039

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., [0][9]). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:

[2]



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)
4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ **2. SEED COAT COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other *(Specify)* _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

[1] 1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ **4. SEED SIZE: (Mature Seed)**

[2][5] Grams per 100 seeds

★ **5. HILUM COLOR: (Mature Seed)**

[4] 1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other *(Specify)* _____

★ **6. COTYLEDON COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green

★ **7. SEED PROTEIN PEROXIDASE ACTIVITY:**

[2] 1 = Low 2 = High

★ **8. SEED PROTEIN ELECTROPHORETIC BAND:**

[0] 1 = Type A ($SP1^a$) 2 = Type B ($SP1^b$)

★ **9. HYPOCOTYL COLOR:**

[3] 1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★ **10. LEAFLET SHAPE:**

[3] 1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other *(Specify)* _____

11. LEAFLET SIZE:

[3] 1 = Small ('Amsoy 71'; 'A5312') 2 = Medium ('Corsoy 79'; 'Gasoy 17') 3 = Large ('Crawford'; 'Tracy')

12. LEAF COLOR:

[3] 1 = Light Green ('Weber'; 'York') 2 = Medium Green ('Corsoy 79'; 'Braxton') 3 = Dark Green ('Gnome'; 'Tracy')

★ **13. FLOWER COLOR:**

[2] 1 = White 2 = Purple 3 = White with purple throat

★ **14. POD COLOR:**

[2] 1 = Tan 2 = Brown 3 = Black

★ **15. PLANT PUBESCENCE COLOR:**

[1] 1 = Gray 2 = Brown (Tawny)

16. PLANT TYPES:

[3] 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton') 3 = Bushy ('Gnome'; 'Govan')

★ **17. PLANT HABIT:**

[3] 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will') 3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ **18. MATURITY GROUP:**

[0][6] 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V 9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

★ **19. DISEASE REACTION:** (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

★ [0] Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)

★ [0] Bacterial Blight (*Pseudomonas glycinea*)

★ [0] Wildfire (*Pseudomonas tabaci*)

FUNGAL DISEASES:

★ [0] Brown Spot (*Septoria glycines*)

Frogeye Leaf Spot (*Cercospora sojina*)

★ [0] Race 1 [0] Race 2 [0] Race 3 [0] Race 4 [0] Race 5 [ ] Other (*Specify*) _____

[0] Target Spot (*Corynespora cassiicola*)

[0] Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)

[0] Powdery Mildew (*Microsphaera diffusa*)

★ [1] Brown Stem Rot (*Cephalosporium gregatum*)

[0] Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

★ [1] Pod and Stem Blight *(Diaporthe phaseolorum* var; *sojae)*

[1] Purple Seed Stain *(Cercospora kikuchii)*

[0] Rhizoctonia Root Rot *(Rhizoctonia solani)*

Phytophthora Rot *(Phytophthora megasperma* var. *sojae)*

★ [2] Race 1 [0] Race 2 [2] Race 3 [2] Race 4 [0] Race 5 [0] Race 6 [1] Race 7

[0] Race 8 [0] Race 9 [ ] Other *(Specify)* Resistant to races 16 and 25, gene from PI 82263-2

VIRAL DISEASES:

[0] Bud Blight (Tobacco Ringspot Virus)

[0] Yellow Mosaic (Bean Yellow Mosaic Virus)

★ [0] Cowpea Mosaic (Cowpea Chlorotic Virus)

[0] Pod Mottle (Bean Pod Mottle Virus)

★ [0] Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode *(Heterodera glycines)*

★ [0] Race 1 [0] Race 2 [0] Race 3 [0] Race 4 [ ] Other *(Specify)* _____

[0] Lance Nematode *(Hoplolaimus Colombus)*

★ [0] Southern Root Knot Nematode *(Meloidogyne incognita)*

★ [0] Northern Root Knot Nematode *(Meloidogyne Hapla)*

[0] Peanut Root Knot Nematode *(Meloidogyne arenaria)*

[0] Reniform Nematode *(Rotylenchulus reniformis)*

[ ] OTHER DISEASE NOT ON FORM *(Specify):* _____

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

★ [1] Iron Chlorosis on Calcareous Soil

[ ] Other *(Specify)* _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[1] Mexican Bean Beetle *(Epilachna varivestis)*

[2] Potato Leaf Hopper *(Empoasca fabae)*

[ ] Other *(Specify)* _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape		Seed Coat Luster	
Leaf Shape		Seed Size	
Leaf Color		Seed Shape	
Leaf Size		Seedling Pigmentation	

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
Submitted	125	2.1				42.2	21.1	24.9	
Vinton 81 Name of Similar Variety	118	2.0				43.0	20.8	22.4	

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A_2 in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

'Ohio FG2' Exhibit E - Basis of Applicant's Ownership

'Ohio FG2' is owned by the Ohio Agricultural Research and Development Center, The Ohio State University (OARDC-OSU). The development of Ohio FG2 was carried out by employees of OARDC-OSU as part of their assigned duties.

Cooperative arrangements permitting OARDC-OSU to use 'LS301' (one of the parents of Ohio FG2) in hybridizations can be documented. The other parent of Ohio FG2, HS84-6247, is a breeding line developed and owned by OARDC-OSU.

In cases where testing or seed increase were carried out by collaborating institutions, memoranda of understanding or other documents can be provided to clearly indicate that ownership of the variety resides with OARDC-OSU.